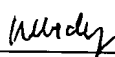


**CERTIFICATE OF TRANSMISSION**

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Alexandria VA 22313-1450 on September 16, 2004.

Signed: \_\_\_\_\_



Wendy LIM

**Facsimile Transmission Cover Sheet**

Recipient: Mail Stop PCT  
Office of PCT Legal Administration  
Fax (703) 308 6459

Art Unit 2811

Confirmation No. 1967

Sender: Dexter Chin  
Horizon IP Pte Ltd  
Office (65) 9836 9908

Subject Matter: US Patent Application Number: 10/707,968  
Renewed Petition Under 37 CFR 1.182

Total Pages (including cover sheet): 11 pages

Attachments:

- a) Certificate of Transmission
- b) Transmittal Form
- c) Fee Transmittal Form
- d) Renewed Petition Under 37CFR 1.182
- e) Copy of ePAVE Screenshot - Exhibit A
- f) Copy of Application Data Sheet - Exhibit B
- g) Copy of Specification (Electronic Version) - Exhibit C

**RECEIVED**

16 SEP 2004

Legal Staff  
International Division

PTO/SB/97 (05-03)

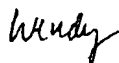
Approved for use through 04/30/2003. OMB 0851-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

## Certificate of Transmission under 37 CFR 1.8

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office

on September 16, 2004  
Date



Signature

Wendy LIM

Typed or printed name of person signing Certificate

Note: Each paper must have its own certificate of transmission, or this certificate must identify each submitted paper.

- a) Transmittal Form
- b) Fee Transmittal Form
- c) Renewed Petition Under 37 CFR 1.182
- d) Copy of ePAVE Screenshot - Exhibit A
- e) Copy of Application Data Sheet - Exhibit B
- f) Copy of Specification (Electronic Version) - Exhibit C

This collection of information is required by 37 CFR 1.8. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.8 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

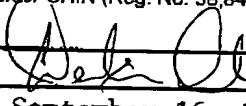
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

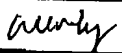
PTO/SB/21 (02-04)

Approved for use through 07/31/2008, OMB 0651-0031

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence after initial filing)</i>	Application Number	10/707,968	
	Filing Date	January 29, 2004	
	First Named Inventor	Dominique MANGELINCK	
	Art Unit	2811	
	Examiner Name	Not Assigned Yet	
Total Number of Pages In This Submission	11	Attorney Docket Number	ASTAP2004-01

ENCLOSURES (Check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input checked="" type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance communication to Technology Center (TC) <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks Renewed Petition under 37 CFR 1.182 a) Copy of ePAVE Screenshot - Exhibit A b) Copy of Application Data Sheet - Exhibit B c) Copy of Specification (Electronic Version) - Exhibit C		
SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT		
Firm or Individual name	Dexter CHIN (Reg. No. 38,842)	
Signature		
Date	September 16, 2004	

CERTIFICATE OF TRANSMISSION/MAILING		
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.		
Typed or printed name	Wendy LIM	
Signature		Date September 16, 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/17 (10-03)

Approved for use through 07/31/2006. OMB 0851-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# FEE TRANSMITTAL

## for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 110

## Complete if Known

Application Number	10/707,968
Filing Date	January 29, 2004
First Named Inventor	Dominique MANGELINCK
Examiner Name	Not Assigned Yet
Art Unit	2811
Attorney Docket No.	ASTAP2004-01

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

 Deposit Account Number: 50-2388  
 Deposit Account Name: Horizon IP Pte Ltd

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments

☒ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

## FEE CALCULATION

## 1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 770	2001 385	Utility filing fee	
1002 340	2002 170	Design filing fee	
1003 530	2003 265	Plant filing fee	
1004 770	2004 385	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1) (\$)			

## 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims		Extra Claims		Fee from below	Fee Paid
Independent Claims		-20** =		X	
Multiple Dependent		-3** =		X	

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 86	2201 43	Independent claims in excess of 3
1203 290	2203 145	Multiple dependent claim, if not paid
1204 86	2204 43	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$)

\*\*or number previously paid, if greater. For Reissues, see above

## FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for <i>ex parte</i> reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	110
1252 420	2252 210	Extension for reply within second month	
1253 950	2253 475	Extension for reply within third month	
1254 1,480	2254 740	Extension for reply within fourth month	
1255 2,010	2255 1,005	Extension for reply within fifth month	
1401 330	2401 165	Notice of Appeal	
1402 330	2402 165	Filing a brief in support of an appeal	
1403 290	2403 145	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,330	2453 665	Petition to revive - unintentional	
1501 1,330	2501 665	Utility issue fee (or reissue)	
1502 480	2502 240	Design issue fee	
1503 640	2503 320	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 770	2809 385	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 770	2810 385	For each additional invention to be examined (37 CFR 1.129(b))	
1801 770	2801 385	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 110

## SUBMITTED BY

Name (Print/Type)	Dexter CHIN	Registration No. (Attorney/Agent)	38,842	Telephone	+65 98369908
Signature		Date	September 16, 2004		

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.

SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Appl. No.: 10/707,968

Renewed Petition under 37 CFR 1.182, dated September 16, 2004

Response to Decision of June 25, 2004

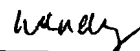
**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Appl. No. : 10/707,968 Confirmation No. : 1967  
Applicant : Dominique MANGELINCK  
et al.  
Filed : January 29, 2004  
TC / A.U. : 2811  
Examiner : Not Assigned Yet  
Docket No. : ASTAP2004-01  
Customer No. : 031366  
Title : Gate Electrodes and the Formation Thereof

**CERTIFICATE OF TRANSMISSION**

I hereby certify that this correspondence is being  
facsimile transmitted to the United States Patent and  
Trademark Office, Alexandria, VA 22313-1450 on  
September 16, 2004.

Signed: \_\_\_\_\_



Wendy LIM

**Mail-Stop PCT**

Commissioner for Patents  
Office of PCT Legal Administration  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**Renewed Petition Under 37 CFR 1.182**

Sir:

In response to the Decision mailed on June 25, 2004 (Decision) in the above-identified application, Applicant respectfully requests reconsideration on the merits for the petition under 37 CFR § 1.182 (Petition) filed on May 26, 2004.

Appl. No.: 10/707,968  
Renewed Petition under 37 CFR 1.182, dated September 16, 2004  
Response to Decision of June 25, 2004

In the Decision, the Examiner dismissed the Petition without prejudice for the following reasons:

- i) although the EFS software may be used to file a continuation of a PCT application, it does not permit the filing of a national stage application based on a PCT application;
- ii) the fact that Applicant may have incorrectly entered text into the "Continuing Data" field does not enable Applicant to submit an impermissible application type; and
- iii) Applicant has failed to show sufficient cause (e.g., the loss of patent rights) for the Petition to be granted.

With respect to point i), Applicant respectfully disagrees. Applicant refers the Examiner to the Continuity Data page under the Application Data Sheet section of the EFS software. *See Exhibit A.* As clearly evident, the Continuity Data page allows an applicant to select that the electronically filed application is the national phase of an international application under 35 U.S.C. § 371. *See Exhibit A, element a.* Applicant therefore submits that the EFS software does permit the filing of a national stage application based on a PCT application.

As to point ii), Applicant also respectfully disagrees. The Application Data Sheet is automatically generated by the EFS software based on information provided in the various pages under the Application Data Sheet section, such as from the Continuity Data page as discussed above. *See Exhibit B.* Since the Application Data Sheet is automatically generated by the EFS software, Applicant could not have incorrectly entered text into the "Continuing Data" field of the Application Data Sheet as stated by the Examiner. As clearly indicated by

Appl. No.: 10/707,968  
Renewed Petition under 37 CFR 1.182, dated September 16, 2004  
Response to Decision of June 25, 2004

the automatically generated Application Data Sheet, the EFS software does recognize that the electronically filed application is a "National State of SG application number PCT/SG02/00174, filed 2002-07-31, now Published". See Exhibit B, element b. Applicant therefore submits that a national stage application based on an international application under 35 U.S.C. § 371 is a permitted application type and that the EFS software does permit and recognize the filing of such an application.

Furthermore, the specification, as originally filed, under the EFS software contains a reference clearly indicating that the Application is a National Stage of the International Application. See Exhibit C, element c. Applicant therefore submits that the Application fully complies with 37 CFR 1.495(g) by clearly identifying it as a submission to enter national stage under 35 U.S.C. 371.

As for point iii), Applicant submits that failure to grant this renewed petition would cause the application to lose its priority date of July 31, 2002, resulting in Applicant's subsequent loss of patent rights. Therefore, sufficient cause has been shown for this petition to be granted.

In view of the evidence presented, Applicant respectfully requests that this renewed petition under 37 CFR 1.182 be granted, recognizing that US Application No. 10/707,968 is a national stage of PCT Application No. PCT/SG02/00174 under 35 U.S.C. §371. Issuance of a corrected formal filing receipt is respectfully requested and most appreciated.

Appl. No.: 10/707,968

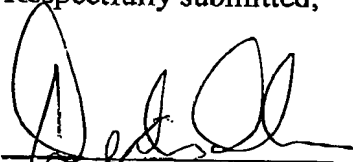
Renewed Petition under 37 CFR 1.182, dated ~~September~~ 16, 2004

Response to Decision of June 25, 2004

Please charge the extension fee for one month of \$110.00 to Deposit Account No. 50-2388. Although Applicant believes that no other fees are due, the Commissioner is nevertheless authorized to charge any additional fees that may be required, or credit any overpayment to this account.

Date : September 16, 2004

Respectfully submitted,



Dexter CHIN  
Attorney for Applicant  
Reg. No. 38,842

Horizon IP Pte Ltd  
166 Kallang Way,  
6<sup>th</sup> Floor  
Singapore 349249  
Tel: (65) 9836 9908  
Fax: (65) 6746 8263



Exhibit A

BEST AVAILABLE COPY

McPave S.1 - New utility / Application Data Sheet / Continuity data (Status: Submission completed)

File Edit View Help

Actions

- ☒ Add common data elements
- ☒ Attach files to the project
- ☒ Validate the project
- ☒ Submit to USPTO
- ☒ Obtain acknowledgement receipt

New utility

- ☒ Application Data Sheet
  - ☒ Correspondence address
  - ☒ Inventor
  - ☒ Continuity data
  - ☒ Attorney information
  - ☒ Foreign priority claims
  - ☒ Publication information
  - ☒ Publication assignee information
  - ☒ Preview (Application Data Sheet)
- ☒ Declaration
  - ☒ Preview (Declaration)
- ☒ Power of attorney
  - ☒ Preview (Power of attorney)
- ☒ Assignment
  - ☒ Preview (Assignment)
- ☒ Information disclosure statement
  - ☒ Preview (IDS)
- ☒ Fee Transmittal
  - ☒ Fee calculation
  - ☒ Method of payment
  - ☒ Preview (Fee transmittal)

Legends

- ☒ Required for this submission type
- ☒ Required, but allowed to submit optional for this submission type
- ☒ Required for some submission types

Continuity Data

Continuity Information	Application #	Filing Date	Filing	Status
This application is a 371 of international	PCT/SG02/00174	20020731	SG	Published

Preface Phrase

☒ This application is a ☐ Said application is a

Relationship

☐ continuation of ☐ division of ☐ continuation in part of ☒ 371 of international  
☐ substitution for ☐ reissue of ☐ non provisional of ☐ re-examination of

Application Information

Application Num: PCT/SG02/00174 Filing Date: 2002-07-31 (yyyy-mm-dd)

Country: SINGAPORE [SG]

Status

☐ Patent Granted ☒ Patent Granted ☒ Application Status

Patent: Issue Date: 2004-09-10 (yyyy-mm-dd)

Country: UNITED STATES OF AMERICA Kind Code:

Application Status: Published

Add Update Delete

<< Back Next >> Help

(a)

\*\*\*\*\*  
\*\*\* RX REPORT \*\*\*  
\*\*\*\*\*

RECEPTION OK

TX/RX NO	7224
RECIPIENT ADDRESS	6567468263
DESTINATION ID	
ST. TIME	09/16 01:59
TIME USE	03'31
PGS.	11
RESULT	OK

US-Request

BEST AVAILABLE COPY

Exhibit B

## APPLICATION DATA SHEET

Electronic Version v14

Stylesheet Version v14.0

Title of Invention

Gate Electrodes and the Formation Thereof

Application Type: regular, utility

Attorney Docket Number: ASTAP2004-01

Correspondence address:

Customer Number:

031366

\*031366\*

(b)  
Continuing Data:

This is a National Stage of SG application number PCT/SG02/00174, filed 2002-07-31, now Published.

Priority Data:

Doc.No: 0104614-3; Country - SG; Date: 2001-07-31 us-priority-claimed

Inventors Information:

Inventor 1:

Applicant Authority Type: Inventor

Citizenship: FR

Name prefix: Mr.

Given Name: Dominique

Family Name: Mangelinck

City of Residence: Marseille

Country of Residence: FR

Address-1 of Mailing Address: L2MP, UMR CNRS 6137, Case 151,

Address-2 of Mailing Address: Faculte de St Jerome, Marseille Cedex 20, France 13397

City of Mailing Address: Marseille

State of Mailing Address:

Postal Code of Mailing Address: 13397

Country of Mailing Address: FR

Phone:

Fax:

Exhibit C

# SPECIFICATION

[Electronic Version 1.2.8]

## GATE ELECTRODES AND THE FORMATION THEREOF

### Cross Reference to Related Applications

(c)

This application is the National Stage of International Application No. PCT/SG02/00174, filed July 31, 2002, and which was published in English under PCT Article 21(2) as WO 03/012876 A1 on February 13, 2003. The international application claims priority to Singaporean Application No. 200104614-3, filed July 31, 2001.

### Background of Invention

[0001] Referring to Figure 1 of the accompanying drawings, a complementary metal oxide semiconductor (CMOS) transistor comprises an n channel MOS (NMOS) and a p channel MOS (PMOS). Historically, a polycrystalline n<sup>+</sup>-Si gate is used as a gate electrode both in NMOS and PMOS transistors. For PMOS transistors additional boron implantation into the channel region of the Si substrate is needed to control the threshold voltage because of the low work function of n<sup>+</sup>-Si. This can produce short channel effects and large sub-threshold currents and thus the PMOS transistor is less scaleable than the NMOS transistor. In order to solve this problem, a dual gate configuration where polycrystalline n<sup>+</sup>-Si and p<sup>+</sup>-Si are used as the gate for the NMOS and PMOS transistors, respectively, has been suggested. However, the dual gate CMOS has drawbacks, most notably boron penetration (for PMOS) through the gate oxide and the poly-depletion effect. Instead of using a dual gate, a material with a work function close to the value of the middle of the bandgap of silicon (4.61 eV), can be used for both NMOS and PMOS transistors. A material with such a work function is called a mid-gap material and the process utilising this material for a gate electrode is known as mid-gap CMOS technology.

[0002] In addition, the contact surface of the gate electrode is actually provided by a silicide layer (TiSi<sub>2</sub>, CoSi<sub>2</sub>, PtSi<sub>2</sub>, PtSi or NiSi) on top of the polycrystalline Si gate (e.g. n<sup>+</sup>-Si) in current CMOS fabrication processes. At relatively high temperatures (e.g. 600°C), the silicide film is usually degraded by two phenomena: inversion and agglomeration. Inversion is due to the grain growth of Si during the formation of